

## CLAIMS:

1. An image sensor comprising:  
a plurality of pixels in which at least two or more pixels have a  
5 charge control structure used to change charge capacity during the integration  
time; wherein at substantially a beginning of an exposure time the charge capacity  
is altered to substantially zero by either the charge control structure or a read-out  
mechanism and the charge capacity is changed by the charge control structure  
throughout the exposure time such that substantially no portion of the pixel photo  
10 response curve is substantially linear.
2. The image sensor as in claim 1, wherein multiplying each  
pixel by a substantially constant value compensates variations of the charge  
capacity.  
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3. The image sensor as in claim 1, wherein the charge capacity  
control structure is pulsed so as to substantially reproduce the photo response  
curve.
- 20 4. The image sensor as in claim 2, wherein the charge capacity  
control structure is pulsed so as to substantially reproduce the photo response  
curve.
5. The image sensor as in claim 2, wherein a look up table is  
25 used to translate the photo response curve into linear space for color filter  
processing.
6. The image sensor as in claim 2, wherein multiplying gain  
change values are stored in a digital camera.  
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7. The image sensor as in claim 1, wherein the capacity control structure is adjusted to produce the desired photo response curve substantially entirely within the duration of a flash lamp exposure.
- 5 8. The image sensor as in claim 1, wherein the image sensor is disposed in a digital camera that includes a mechanism to switch between linear and nonlinear photo response.
9. The image sensor as in claim 1, wherein the image sensor is  
10 an interline CCD in which images are substantially read out of a vertical CCD before starting the integration in photodiodes of any next images.
10. A camera comprising:  
an image sensor comprising a plurality of pixels in which at least  
15 two or more pixels have a charge control structure used to change charge capacity during the integration time; wherein at substantially a beginning of an exposure time the charge capacity is altered to substantially zero by either the charge control structure or a read-out mechanism and the charge capacity is changed by the charge control structure throughout the exposure time such that substantially  
20 no portion of the pixel photo response curve is substantially linear.
11. The camera as in claim 10, wherein multiplying each pixel by a substantially constant value compensates variations of the charge capacity.
- 25 12. The camera as in claim 10, wherein the charge capacity control structure is pulsed so as to substantially reproduce the photo response curve.
13. The camera as in claim 11, wherein the charge capacity  
30 control structure is pulsed so as to substantially reproduce the photo response curve.

14. The camera as in claim 11, wherein a look up table is used to translate the photo response curve into linear space for color filter processing.

5 15. The camera as in claim 11, wherein multiplying gain change values are stored in a digital camera.

10 16. The camera as in claim 10, wherein the capacity control structure is adjusted to produce the desired photo response curve substantially entirely within the duration of a flash lamp exposure.

17. The camera as in claim 10, wherein the image sensor is disposed in a digital camera that includes a mechanism to switch between linear and nonlinear photo response.

15 18. The camera as in claim 10, wherein the image sensor is an interline CCD in which images are substantially read out of a vertical CCD before starting the integration in photodiodes of any next images.